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10/682,093	10/08/2003	Daniel Luch		9216

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EXAMINER	
BARTON, JEFFREY THOMAS	

ART UNIT	PAPER NUMBER
1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	**Application No.** 10/682,093	**Applicant(s)** LUCH, DANIEL
	Examiner Jeffrey T. Barton	**Art Unit** 1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *20070213*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 15 is objected to because of the following informalities: the words "Directly Electroplateable Resin" in lines 2-3 of the claim should not be capitalized. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3 and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 3, there is no disclosure of any bonding material having a resistivity specifically less than 10,000 ohm-cm. Paragraph 0040, which is cited for support, is a portion of the background describing resistive materials as having resistivities greater than 10,000 ohm-cm, with no relationship to the claimed structure at all.

Regarding claim 17, there is no disclosure that the listed metals are specifically suitable for the claimed structure. Paragraphs 0012, 0014, and 0025, which are cited for support, are portions of the background mentioning these metals in completely different context, with no teaching that they are contemplated in a structure as instantly claimed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 2, 4-12, and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Little. (US 4,380,112)

Regarding claim 2, Little discloses a current collector structure as claimed (Figures 1-4, 9, and 10; Plate 34, wires 24, 28) comprising an electrically conductive collector material (Wires 24) positioned on a first surface of a polymeric sheetlike film. (34; Polymeric material disclosed at Column 6, line 68 - Column 7, line 5)

Undue weight cannot be given to the limitations "suitable for conveying current from a conductive surface" or "capable of adhesively bonding to said conductive surface during lamination of said collector structure to said conductive surface and thereby achieve contact of said conductive collector material with said conductive surface", because these limitations are solely drawn to the intended use of the structure, without defining any structure. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, the structure of Little is capable of performing these functions, as demonstrated in the further disclosure of Little. (Figure 1 shows suitability for conveying current from a conductive surface; Column 8, lines 26-36 teach adhesion)

Undue weight also cannot be given to the limitation "said combination being initially prepared using a continuous roll-to-roll process separate and distinct from said conductive surface", because this limitation is drawn only to the formation of a product by a specified process. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) In the instant case, the claimed structure is not distinct from that disclosed by Little.

Regarding claim 4, although there is no positive recitation requiring a conductive surface in the claim, Little in fact discloses adhesion of the structure to the doped semiconductor surface of a photovoltaic cell, which will possess appreciable conductivity and therefore corresponds to a "conductive surface". (Column 8, lines 26-36)

Regarding claim 5, because no positive recitation requires a conductive surface as part of the claimed current collector structure, the current collector structure of this claim is anticipated for the reasons given above in rejecting claim 2.

Regarding claims 6 and 7, Little discloses the sheetlike film being a laminate of plastic with an antireflective coating comprising silicon. (Column 7, lines 6-21)

Regarding claims 8-11, the wires 24 of Little read on the fingers and multiple parallel traces of these claims. Figure 6 shows the sheetlike film extending beyond the terminal ends of wires 24.

Regarding claim 12, busses 28 read on the claimed buss structure.

Regarding claim 16, there is structurally no difference between the claimed combination and that taught by Little, and the structure is therefore anticipated. Undue weight cannot be given to this limitation to the formation of a product by a specified process. Note the comments regarding product-by-process claims made above in rejecting claim 2.

Regarding claim 17, Little discloses that the wires 24 can comprise nickel, copper, or silver. (Column 7, line 61 - Column 8, line 3)

Regarding claim 18, there is structurally no difference between the claimed combination and that taught by Little, and the structure is therefore anticipated. Undue weight cannot be given to this limitation to the formation of a product by a specified process. Note the comments regarding product-by-process claims made above in rejecting claim 2.

6. Claims 2-5, 8-10, and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lupinski. (US 3,764,280)

Regarding claim 2, Lupinski discloses a structure as claimed (Figures 1-3) comprising an electrically conductive material (L-shaped structure of Figure 1; Example 1) positioned on a first surface of a polymeric sheetlike film. (Substrate; plastics demonstrated at Column 10, lines 54-57 and Column 14, lines 7-10)

Undue weight cannot be given to the limitations “suitable for conveying current from a conductive surface” or “capable of adhesively bonding to said conductive surface during lamination of said collector structure to said conductive surface and thereby achieve contact of said conductive collector material with said conductive surface”, because these limitations are solely drawn to the intended use of the structure, without defining any structure. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, the Examiner considers the structure of Lupinski to be capable of performing these functions, because the structure taught by Lupinski corresponds to all structural limitations of the claim.

Undue weight also cannot be given to the limitation “said combination being initially prepared using a continuous roll-to-roll process separate and distinct from said conductive surface”, because this limitation is drawn only to the formation of a product by a specified process. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) In the instant case, the claimed structure is not distinct from that disclosed by Lupinski.

Regarding claim 3, the "metal coating" shown in Figure 3 of Lupinski reads on a "bonding material", since it is clearly bound to the underlying "electronically conductive coating". A copper metal coating is demonstrated in Example 1 (Column 11, lines 26-49), which has a resistivity according to the claim limitations.

Regarding claim 4, because no positive recitation requires a conductive surface as part of the claimed current collector structure, the current collector structure of this claim is anticipated for the reasons given above in rejecting claim 2.

Regarding claim 5, because no positive recitation requires a conductive surface as part of the claimed current collector structure, the current collector structure of this claim is anticipated for the reasons given above in rejecting claim 2.

Regarding claims 8-10, the structure shown in Figure 1 of Lupinski reads on the fingers and multiple traces of these claims. Figures 1-3 show the sheetlike film extending beyond the terminal ends of the structure.

Regarding claims 13-15, Lupinski et al teach providing an elastomer including reduced metal particles that provide conductivity (Column 10, line 39 - Column 11, line

7), which reads on the "electrically conductive polymer" and "directly electroplateable resin". Electroplating is performed onto this layer subsequent to reduction of the metal in the elastomer matrix. (Column 11, lines 26-49.

Regarding claim 16, although no particular weight can be given to the manner in which the structure is made, Lupinski discloses electroless plating on the polymer layer (Column 5, lines 60-68), which corresponds to a "chemically deposited metal".

Regarding claim 17, Lupinski discloses that the structure comprises copper. (Column 11, lines 26-49)

Regarding claim 18, although no particular weight can be given to the manner in which the structure is made, the application of the layer shown in Figure 1 as described at Column 9, line 68 - Column 10, line 9 reads on provision of "printed material".

7. Claims 2-13 and 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuzuki et al.

Regarding claim 2, Tsuzuki et al disclose a current collector structure as claimed (Figures 3 and 4) comprising an electrically conductive material (e.g. 406) positioned on a first surface of a polymeric sheetlike film (301/302; Column 4, lines 45-64; with cells 300embedded in the encapsulant, the conductive structure of Figure 4 will be at a surface of the encapsulant film as claimed)

Undue weight cannot be given to the limitations "suitable for conveying current from a conductive surface" or "capable of adhesively bonding to said conductive surface during lamination of said collector structure to said conductive surface and thereby achieve contact of said conductive collector material with said conductive surface", because these limitations are solely drawn to the intended use of the structure, without defining any structure. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In the instant case, the structure is capable of the intended function, as disclosed by Tsuzuki et al.

Undue weight also cannot be given to the limitation "said combination being initially prepared using a continuous roll-to-roll process separate and distinct from said conductive surface", because this limitation is drawn only to the formation of a product by a specified process. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) In the instant case, the claimed structure is not distinct from that disclosed by Tsuzuki et al.

Regarding claim 3, the collector electrode 405 shown in Figure 4 of Tsuzuki et al reads on a "bonding material" as claimed. The metals disclosed as suitable for electrode 405 meet the resistivity limitation. (Column 7, lines 2-5)

Regarding claims 4 and 5, because no positive recitation requires a "conductive surface" as part of the claimed current collector structure, the current collector structure of this claim is anticipated for the reasons given above in rejecting claim 2. In addition, Tsuzuki et al in fact disclose the structure being adhered to a TCO surface of a photovoltaic cell (TCO layer 404; Column 6, lines 40-60)

Regarding claims 6 and 7, the sheetlike film of Tsuzuki et al has multiple layers (301 and 302) and layer 301 can be glass, which comprises silicon. (Column 5, lines 16-18)

Regarding claims 8-12, Tsuzuki disclose the electrode being in a comb shape (Column 6, lines 62-66), which meets the limitations to multiple parallel traces in the form of fingers and the buss structure. Figure 3 clearly shows the sheetlike film extending beyond the terminal ends of the traces.

Regarding claim 13, Tsuzuki et al disclose using metal power in a polymer binder as collector electrode 405, which reads on the term "electrically conductive polymer".

Regarding claim 16, there is structurally no difference between the claimed combination and that taught by Tsuzuki, and the structure is therefore anticipated. Undue weight cannot be given to this limitation to the formation of a product by a specified process. Note the comments regarding product-by-process claims made above in rejecting claim 2.

Regarding claim 17, Tsuzuki et al disclose that the electrodes 405 can comprise nickel, copper, or silver. (Column 7, lines 2-53)

Regarding claim 18, there is structurally no difference between the claimed combination and that taught by Tsuzuki et al, and the structure is therefore anticipated. Undue weight cannot be given to this limitation to the formation of a product by a specified process. Note the comments regarding product-by-process claims made above in rejecting claim 2.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Jeffrey T. Barton whose telephone number is (571) 272-1307. The examiner can normally be reached on M-F 9:00AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JTB
12 April 2007

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